

WHAT IS CLAIMED IS:

- 1 1. A method for making switch-based C/I measurements for a wireless
2 network including a plurality of cell sites, comprising steps of:
 - 3 (a) designating a first cell site of the plurality of cell sites as a cell-under-test
4 (CUT) site, and sectors of other cell sites as measurement sectors;
 - 5 (b) configuring a set of system-unique analog frequencies and a set of
6 system-unique DCCH frequencies corresponding to the CUT site;
 - 7 (c) broadcasting from the CUT site carrier signals at the set of system-
8 unique analog frequencies and interference signals at the set of system-unique
9 DCCH frequencies;
 - 10 (d) measuring downlink signal strengths of the carrier signals at mobile
11 stations located within an area serviced by the CUT site;
 - 12 (e) measuring signal strengths of the interference signals within areas
13 serviced by the measurement sectors;
 - 14 (f) recording the signal strengths of the carrier and interference signals
15 measured in steps (d) and (e); and
 - 16 (g) designating another cell site of the plurality of cell sites as the CUT site
17 and repeating steps (b) through (f).
- 1 2. The method of claim 1, wherein:
2 the CUT site comprises a plurality of CUT sectors;

the set of system-unique analog frequencies comprises a plurality of different analog frequencies, each one of the plurality of different analog frequencies uniquely corresponding to one of the plurality of CUT sectors;

the set of DCCH frequencies comprises a plurality of different DCCH frequencies, each one of the plurality of different DCCH frequencies uniquely corresponding to one of the plurality of CUT sectors; and

the step of measuring downlink signal strengths of the carrier signals comprises measuring a signal strength of a selected one of the plurality of different analog signals corresponding to the CUT sector serviced by the measuring mobile station.

3. The method of claim 1, further comprising the step of repeating steps (b)-(g) until each one of the plurality of cell sites has been designated as the CUT site.

4. The method of claim 1, wherein the step of measuring signal strength further comprises measuring downlink signal strength of the interference signals via a plurality of mobile stations serviced by the plurality of measurement sectors.

5. The method of claim 1, wherein the step of measuring signal strength further comprises measuring uplink signal strength of the interference signals via a plurality of base stations associated with the plurality of measurement sectors.

1 6. The method of claim 1, wherein the step of configuring system-unique
2 DCCH frequencies further comprises the steps of:
3 removing DCCH frequencies from service in the wireless network;
4 retuning the removed DCCH frequencies to the system-unique DCCH
5 frequencies;
6 restoring the system-unique DCCH frequencies to service in the wireless
7 network; and
8 executing an operational script that prohibits mobile stations in the
9 wireless network from using the system-unique DCCH frequencies for voice
10 communication.

1 7. The method of claim 6, wherein executing the operational script further
2 comprises modifying a channel set list, a mobile-assisted handoff list, and an
3 interfering neighbor list.

1 8. The method of claim 1, further comprising the step of generating a plurality
2 of carrier signal strength to interference signal strength ratios to build a switch-
3 based C/I matrix.

1 9. The method of claim 8, wherein generating a plurality of carrier signal
2 strength to interference signal strength ratios further comprises generating
3 average carrier signal strength to average interference signal strength ratios based
4 upon a statistical analysis of the carrier signals and interference signals.

10. An electronic-readable medium having embodied thereon a program, the program being executable by a machine to perform a method for making switch-based C/I measurements for a wireless network including a plurality of cell sites, the method comprising steps of:

(a) designating a first cell site of the plurality of cell sites as a cell-under-test (CUT) site, and sectors of other cell sites as measurement sectors;

(b) configuring a set of system-unique analog frequencies and a set of system-unique DCCH frequencies corresponding to the CUT site;

(c) broadcasting from the CUT site carrier signals at the set of system-unique analog frequencies and interference signals at the set of system-unique DCCH frequencies;

(d) measuring downlink signal strengths of the carrier signals at mobile stations located within an area serviced by the CUT site;

(e) measuring signal strengths of the interference signals within areas serviced by the measurement sectors;

(f) recording the signal strengths of the carrier and interference signals measured in steps (d) and (e); and

(g) designating another cell site of the plurality of cell sites as the CUT site and repeating steps (b) through (f).

1 11. The electronic-readable medium of claim 10, wherein the method
2 further includes a step of repeating steps (b)-(g) until each one of the plurality of
3 cell sites has been designated as the CUT site.
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1 12. The electronic-readable medium of claim 10, wherein the step of measuring
2 signal strength further comprises measuring downlink signal strength of the
3 interference signals via a plurality of mobile stations serviced by the plurality of
4 measurement sectors.

1 13. The electronic-readable medium of claim 10, wherein measuring signal
2 strength further comprises the step of measuring uplink signal strength of the
3 interference signals via a plurality of base stations associated with the plurality of
4 measurement sectors.

1 14. The electronic-readable medium of claim 10, wherein the step of configuring
2 system-unique DCCH frequencies further comprises the steps of:
3 removing DCCH frequencies from service in the wireless network;
4 retuning the removed DCCH frequencies to the system-unique DCCH
5 frequencies;
6 restoring the system-unique DCCH frequencies to service in the wireless
7 network; and

8 executing an operational script that prohibits mobile stations in the
9 wireless network from using the system-unique DCCH frequencies for voice
10 communication.

1 15. The electronic-readable medium of claim 10, further comprising the step of
2 generating a plurality of carrier signal strength to interference signal strength
3 ratios to build a switch-based C/I matrix.

1 16. A system for making switch-based C/I measurements for a wireless
2 network, comprising:

3 a CUT site configured to broadcast carrier signals at system-unique analog
4 frequencies and interference signals at system-unique DCCH frequencies;

5 a plurality of mobile stations configured to receive, measure, and transmit
6 signal strengths of the carrier signals and the interference signals; and

7 a plurality of measurement sectors configured to receive the transmitted
8 signal strengths.

1 17. The system of claim 16, wherein a measurement sector of the plurality of
2 measurement sectors is configured to receive the transmitted interference signal
3 strengths from a first set of mobile stations of the plurality of mobile stations
4 located within an area serviced by the measurement sector.

1 18. The system of claim 16, wherein each measurement sector of the plurality of
2 measurement sectors is configured to receive and measure the interference signals
3 broadcast by the CUT site.

1 19. The system of claim 16, wherein the CUT site is configured to receive the
2 transmitted carrier signal strengths from a second set of mobile stations of the
3 plurality of mobile stations located within an area serviced by the CUT site.

1 20. The system of claim 16, further comprising a processor configured to receive
2 the signal strengths from the plurality of measurement sectors, the CUT site, and
3 additional CUT sites, and to generate a switch-based C/I matrix.

1 21. The system of claim 20, wherein the processor is further configured to
2 perform a statistical analysis on the signal strengths to generate the switch-based
3 C/I matrix.

1 22. A system for making switch-based C/I measurements for a wireless network
2 including a plurality of cell sites, comprising:

3 means for designating a first cell site of the plurality of cell sites as a cell-
4 under-test (CUT) site, and sectors of other cell sites as measurement sectors;

5 means for configuring a set of system-unique analog frequencies and a set
6 of system-unique DCCH frequencies corresponding to the CUT site;

7 means for broadcasting from the CUT site carrier signals at the set of
8 system-unique analog frequencies and interference signals at the set of system-
9 unique DCCH frequencies;

10 means for measuring downlink signal strengths of the carrier signals within
11 an area serviced by the CUT site;

12 means for measuring signal strengths of the interference signals within
13 areas serviced by the measurement sectors; and

14 means for recording the signal strengths of the carrier and interference
15 signals measured.

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